



[4910-13-P]

## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2018-0412; Product Identifier 2017-NM-180-AD]**

**RIN 2120-AA64**

**Airworthiness Directives; The Boeing Company Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** We propose to supersede Airworthiness Directive (AD) 2010-25-06, which applies to certain The Boeing Company Model 737-200, -300, -400, and -500 series airplanes. AD 2010-25-06 requires repetitive inspections for cracking of certain fuselage frames and stub beams, and corrective actions if necessary. AD 2010-25-06 also provides for an optional repair, which terminates the repetitive inspections. For airplanes on which a certain repair is done, AD 2010-25-06 also requires repetitive inspections for cracking of certain fuselage frames and stub beams, and corrective actions if necessary. Since we issued AD 2010-25-06, additional cracking was found in areas not covered by the inspections. This proposed AD would retain the actions required by AD 2010-25-06 and would expand the inspection area. We are proposing this AD to address the unsafe condition on these products.

**DATES:** We must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.

- Fax: 202-493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; Internet <https://www.myboeingfleet.com>. You may view this service information at the FAA, Transport Standards Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2018-0412.

### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2018-0412; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, the regulatory evaluation, any comments received, and other information. The street address for Docket Operations (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Galib Abumeri, Aerospace Engineer, Airframe Section, Los Angeles ACO Branch, FAA, 3960 Paramount Boulevard, Lakewood, CA 90712-4137; phone: 562-627-5324; fax: 562-627-5210; email: [galib.abumeri@faa.gov](mailto:galib.abumeri@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Comments Invited**

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2018-0412; Product Identifier 2017-NM-180-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this NPRM. We will consider all comments received by the closing date and may amend this NPRM because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

### **Discussion**

We issued AD 2010-25-06, Amendment 39-16539 (75 FR 81409, December 28, 2010) (“AD 2010-25-06”), for certain Model 737-200, -300, -400, and -500 series airplanes. AD 2010-25-06 requires repetitive inspections for cracking of certain fuselage frames and stub beams, and corrective actions if necessary. AD 2010-25-06 also provides for an optional repair, which terminates the repetitive inspections. For airplanes on which a certain repair is done, AD 2010-25-06 also requires repetitive inspections for cracking of certain fuselage frames and stub beams, and corrective actions if necessary. AD 2010-25-06 resulted from reports of the detection of fatigue cracks at certain frame sections, in addition to stub beam cracking, caused by high flight cycle stresses from both pressurization and maneuver loads. We issued AD 2010-25-06 to detect and correct fatigue cracking of certain fuselage frames and stub beams and possible severed frames, which could result in reduced structural integrity of the frames. This reduced structural

integrity can increase loading in the fuselage skin, which will accelerate skin crack growth and could result in rapid decompression of the fuselage.

#### **Actions Since AD 2010-25-06 Was Issued**

Since we issued AD 2010-25-06, additional cracking was found in areas not covered by the inspections. During an inspection of the body station (BS) 616 stub beam upper chord, an operator identified additional cracking at buttock line (BL) 64. We determined that eddy current inspections of the upper chord at BL 64 and BL 65 must be done to maintain structural integrity. In addition, during inspections of the longitudinal floor beam web at the BS 639 stub beams operators found cracking in the floor beam web. It was determined that the inspections required by AD 2010-25-06 were inadequate, and eddy current inspections of the BL 45.5 floor beam web at the BS 639 stub beam interface must be done to address this cracking.

#### **Related Service Information under 1 CFR part 51**

We reviewed Boeing Alert Service Bulletin 737-53A1254, Revision 3, dated November 13, 2017. The service information describes procedures for detailed and eddy current inspections of the fuselage frame and over wing stub beam at BS 616, BS 639, and BS 597 or BS 601, and BL 45.5 floor beam web at the BS 639 stub beam attachment, and relative investigative and corrective actions. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

#### **FAA's Determination**

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

## Proposed AD Requirements

This proposed AD would retain all requirements of AD 2010-25-06. This proposed AD does not explicitly restate the requirements of AD 2010-25-06. Those requirements are referenced in the service information identified previously, which, in turn, is referenced in this proposed AD, except for any differences identified as exceptions in the regulatory text of this proposed AD. This proposed AD would add new repetitive inspections for cracking of certain other fuselage frames and stub beams. For information on the procedures and compliance times, see this service information at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2018-0412.

Boeing Alert Service Bulletin 737-53A1254, Revision 3, dated November 13, 2017, provides two economic inspections to find cracking prior to frame damage, which could require extensive repairs. These inspections are recommended but are not mandated in this proposed AD.

The phrase “corrective actions” is used in this proposed AD. Corrective actions correct or address any condition found. Corrective actions in an AD could include, for example, repairs.

## Costs of Compliance

We estimate that this proposed AD affects 67 airplanes of U.S. registry. We estimate the following costs to comply with this proposed AD:

### Estimated costs for required actions

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspections	Up to 67 work-hours X \$85 per hour = \$5,695	\$0	Up to \$5,695 per inspection cycle	Up to \$381,565 per inspection cycle

We estimate the following costs to do certain necessary repairs/replacements that would be required based on the results of the proposed inspections. We have no way of determining the number of aircraft that might need these repairs/replacements:

**On-condition costs**

<b>Action**</b>	<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>
Repairs/replacements	Up to 76 work-hours X \$85 per hour = \$6,460	*	Up to \$6,460

\*All required parts are supplied by the operator. This cost is minimal, and we have no way to determine what an operator would pay for these parts.

\*\*We have received no definitive data that would enable us to provide cost estimates for certain other repairs specified in this proposed AD.

**Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA’s authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency’s authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, “General requirements.” Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

This proposed AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order

8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to transport category airplanes to the Director of the System Oversight Division.

### **Regulatory Findings**

We have determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that the proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **The Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by removing Airworthiness Directive (AD) 2010-25-06, Amendment 39-16539 (75 FR 81409, December 28, 2010), and adding the following new AD:

**The Boeing Company:** Docket No. FAA-2018-0412; Product Identifier 2017-NM-180-AD.

#### **(a) Comments Due Date**

The FAA must receive comments on this AD action by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

#### **(b) Affected ADs**

This AD replaces AD 2010-25-06, Amendment 39-16539 (75 FR 81409, December 28, 2010) (“AD 2010-25-06”).

#### **(c) Applicability**

This AD applies to The Boeing Company Model 737-200, -300, -400, and -500 series airplanes, certificated in any category, as identified in Boeing Alert Service Bulletin 737-53A1254, Revision 3, dated November 13, 2017.

#### **(d) Subject**

Air Transport Association (ATA) of America Code 53, Fuselage.

#### **(e) Unsafe Condition**

This AD was prompted by the detection of fatigue cracks at certain frame sections, in addition to stub beam cracking, caused by high flight cycle stresses from both pressurization and maneuver loads and additional cracking found in areas not covered by the inspections in AD 2010-25-06. We are issuing this AD to address fatigue cracking of certain fuselage frames and stub beams and possible severed frames, which could result in reduced structural integrity of the frames. This reduced structural integrity can increase



loading in the fuselage skin, which will accelerate skin crack growth and could result in rapid decompression of the fuselage.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Repetitive Inspections of Body Stations 616 and 639 Frames and Stub Beams and Corrective Actions**

At the applicable time specified table 1 of paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 737-53A1254, Revision 3, dated November 13, 2017: Do a detailed or high frequency eddy current (HFEC) inspection for cracking of the body station (BS) 616 and 639 frames and stub beams and do all applicable related investigative and corrective actions, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1254, Revision 3, dated November 13, 2017, except as required by paragraph (m)(1) of this AD. Do all applicable related investigative and corrective actions before further flight. Thereafter, repeat the inspection at the applicable time specified in table 1 of paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 737-53A1254, Revision 3, dated November 13, 2017.

**(h) Repetitive Post-Repair Inspections of Body Stations 616 and 639 Frames and Integral Stub Beams and Corrective Actions**

At the applicable time specified table 2 of paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 737-53A1254, Revision 3, dated November 13, 2017: Do the inspections required by paragraphs (h)(1) and (h)(2) of this AD; or the inspection required by paragraph (h)(3) of this AD; as applicable, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1254, Revision 3, dated November 13, 2017, except as required by paragraph (m)(1) of this AD. Do all applicable related investigative and corrective actions before further flight. Thereafter, repeat the inspection at the applicable time specified in table 2 of paragraph 1.E.,

“Compliance,” of Boeing Alert Service Bulletin 737-53A1254, Revision 3, dated November 13, 2017.

(1) Do a low frequency eddy current (LFEC) inspection of the web, and an HFEC inspection of the inner and outer chord common to the upper end fastener rows of the web splice doubler for cracking.

(2) Do the inspection specified in paragraph (h)(2)(i) or (h)(2)(ii) of this AD.

(i) Do a detailed inspection of the replacement frame section for cracking.

(ii) Do an HFEC and LFEC inspection of the replacement frame section for cracking.

(3) Do a detailed or HFEC inspection of the replacement stub beam for cracking.

**(i) Repetitive Inspections of Buttock Line 45.5 Longitudinal Floor Beam Web at Body Station 639 Stub Beam Attachment and Corrective Actions**

For Group 1 and Group 2 airplanes as identified in Boeing Alert Service Bulletin 737-53A1254, Revision 3, dated November 13, 2017, at the time specified table 3 or table 4, as applicable, of paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 737-53A1254, Revision 3, dated November 13, 2017, except as required by paragraph (m)(2) of this AD: Do the inspections required by paragraph (i)(1) and (i)(2) of this AD and all applicable corrective actions, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1254, Revision 3, dated November 13, 2017, except as required by paragraph (m)(1) of this AD. Do all applicable corrective actions before further flight. Thereafter, repeat the inspections at the time specified in table 3 or table 4, as applicable, of paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 737-53A1254, Revision 3, dated November 13, 2017.

(1) Do an open-hole HFEC inspection for cracking of the buttock line (BL) 45.5 longitudinal floor beam web at each fastener hole common to the stub beam attachment angle.

(2) Do an HFEC surface inspection for cracking of the BL 45.5 longitudinal floor beam web around the fastener head/tail at each fastener location common to the backup strap.

**(j) Repetitive Post-Repair Inspections of Buttock Line 45.5 Longitudinal Floor Beam Web at Body Station 639 and Corrective Actions**

For Group 2 airplanes as identified in Boeing Alert Service Bulletin 737-53A1254, Revision 3, dated November 13, 2017, at the applicable time specified table 5 of paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 737-53A1254, Revision 3, dated November 13, 2017, except as required by paragraph (m)(2) of this AD: Do the inspections required by paragraphs (j)(1) and (j)(2) of this AD and all applicable corrective actions, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 737-53A1254, Revision 3, dated November 13, 2017, except as required by paragraph (m)(1) of this AD. Do all applicable corrective actions before further flight. Thereafter, repeat the inspections at the applicable time specified in table 5 of paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 737-53A1254, Revision 3, dated November 13, 2017.

(1) Do an open-hole HFEC inspection for cracking of the BL 45.5 longitudinal floor beam web filler at each fastener hole common to the stub beam attachment angle.

(2) Do an HFEC surface inspection for cracking of the BL 45.5 longitudinal floor beam web filler around the fastener head/tail at each fastener location common to the backup strap.

**(k) Repetitive Inspections for Cracking of BS 616 Machined Stub Beam Upper Chord and Corrective Actions**

For Group 2 and Group 3 airplanes as identified in Boeing Alert Service Bulletin 737-53A1254, Revision 3, dated November 13, 2017, at the applicable time specified in table 9 of paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 737-53A1254, Revision 3, dated November 13, 2017, except as required by paragraph (m)(2) of this

AD; do detailed and medium frequency eddy current subsurface inspections for cracking of the BS 616 machined stub beam upper chord, and all applicable corrective actions, except as required by paragraph (m)(1) of this AD. Do all applicable corrective actions before further flight. Thereafter, repeat the inspections at the applicable time specified in table 9 of paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 737-53A1254, Revision 3, dated November 13, 2017.

**(l) Credit for Previous Actions**

(1) This paragraph provides credit for actions required by paragraph (g) of this AD, if those actions were performed before the effective date of this AD, using Boeing Alert Service Bulletin 737-53A1254, Revision 1, dated July 9, 2009; or Boeing Alert Service Bulletin 737-53A1254, Revision 2, dated February 22, 2012.

(2) This paragraph provides credit for actions required by paragraph (h) of this AD, if those actions were performed before the effective date of this AD, using Boeing Alert Service Bulletin 737-53A1254, Revision 2, dated February 22, 2012.

**(m) Exceptions to Service Information Specifications**

(1) Where Boeing Alert Service Bulletin 737-53A1254, Revision 3, dated November 13, 2017, specifies to contact Boeing for repair instructions: Before further flight, do the repair using a method approved in accordance with the procedures specified in paragraph (n) of this AD.

(2) Where Paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 737-53A1254, Revision 3, dated November 13, 2017, specifies a compliance time “after the Revision 3 date of this service bulletin,” this AD requires compliance within the specified compliance time after the effective date of this AD.

**(n) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Los Angeles ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In

accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (o)(1) of this AD. Information may be emailed to:

9-ANM-LAACO-AMOC-Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair, modification, or alteration required by this AD if it is approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) that has been authorized by the Manager, Los Angeles ACO Branch, to make those findings. To be approved, the repair method, modification deviation, or alteration deviation must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

(4) AMOCs approved previously for AD 2010-25-06 are approved as AMOCs for the corresponding provisions of Boeing Alert Service Bulletin 737-53A1254, Revision 3, dated November 13, 2017, that are required by paragraphs (g) and (h) of this AD.

**(o) Related Information**

(1) For information about this AD, contact Galib Abumeri, Aerospace Engineer, Airframe Section, Los Angeles ACO Branch, FAA, 3960 Paramount Boulevard, Lakewood, CA 90712-4137; phone: 562-627-5324; fax: 562-627-5210; email: galib.abumeri@faa.gov.

(2) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; Internet <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Transport Standards Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

Issued in Des Moines, Washington, on May 8, 2018.

Jeffrey E. Duven,  
Director,  
System Oversight Division,  
Aircraft Certification Service.

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